

**FINDING OF NO SIGNIFICANT IMPACT AND ADOPTION OF  
ENVIRONMENTAL ASSESSMENT PREPARED BY  
U.S. ARMY CORPS OF ENGINEERS  
TENNESSEE VALLEY AUTHORITY**

**REQUEST FOR SECTION 26a APPROVAL - FIRST UTILITY DISTRICT PROPOSED  
RAW WATER INTAKE AND WATER TREATMENT PLANT AT SINKING CREEK  
MILE (SCM) 1.0R, KNOX COUNTY, TENNESSEE**

**Proposed Action and Need**

First Utility District of Knox County, Tennessee (FUD) proposes to construct a new raw water intake and pumping station at their existing water treatment plant (WTP) site on the Sinking Creek Embayment of Fort Loudoun Reservoir. FUD provides potable water to 25,600 residences and 3,800 commercial customers in southwestern Knox County and the town of Farragut, Tennessee. Population growth trends for the area are expected to continue and FUD expects significant future customer growth for water service. The proposed water intake facility would provide potable water for the projected population growth into the year 2020.

The proposed work consists of the construction of a 42 inch diameter ductile iron intake line that will extend into Sinking Creek embayment of Fort Loudoun Reservoir. A 60 inch diameter "wedge-wire" screen, with 1/8 inch openings and a thru-flow velocity of 0.5 feet/second, would be installed at the end of the intake line (centerline elevation of 793.0 feet mean sea level (msl)) at a point approximately 120 feet from the normal summer pool (NSP) at 813.0 feet msl elevation. The top of the screen would be at 795.5 feet msl elevation, 11.5 feet below Fort Loudoun Reservoir's normal winter pool of 807.0 feet msl. An 8 inch diameter air line would also be installed parallel to the 42 inch line for a compressed air backwash system. The volume of material to be excavated/dredged below NSP would be approximately 800 cubic yards. In addition, approximately 350 cubic yards of riprap would be placed over the pipe.

The intake line is designed for an ultimate capacity of 36 million gallons per day (MGD). A raw water pump station will be installed upland a short distance away. The proposed pump station would have an ultimate capacity of 36 MGD. Initially, one 150-Horse Power (HP), variable-speed, 9.0 MGD vertical turbine pump and one 150-HP, constant speed 9.0 MGD vertical turbine pump would be installed. Once the new intake is fully operational, the existing intakes will be used only as necessary to meet daily demands.

The width of the trench excavation would be on average approximately 11-feet to 12-feet and, depending on the location, approximately 15-feet or less in depth to accommodate the pipe and anchors. Generally, in-stream construction would be accomplished using floating platforms (barges) or temporary riprap construction pads.

Section 1.2, Description/Project Purpose, in the attached U.S. Army Corps of Engineers

(USACE) Environmental Assessment (EA) provides a more detailed description of the project proposal. The attached USACE Permit Number 408700 provides details of the intake structure, anchoring method, dimensions and construction methods.

FUD currently provides water to its customers from its existing WTP, which withdraws raw water from the same source. The existing WTP would be used as an alternative source and phased out in future years once this new source becomes available.

TVA's action would be to approve the proposed water intake and riprap under Section 26a of the TVA Act. The proposal and impacts are evaluated in the attached EA.

USACE has prepared an EA to review the impacts of the project to the environment, and issued a Finding of No Significant Impact (FONSI). On October 26, 2005, USACE issued an individual permit for the water intake and riprap. (see attachments).

### **Alternatives**

The EA considers three alternatives: a no action alternative, the applicant's proposed action, and the applicant's proposed action with special considerations. No other reasonable alternatives are evident that would have lesser impacts.

No Action. Under this alternative, the permit to install the water intake and riprap would be denied and neither the adverse environmental impacts nor the socioeconomic benefits identified in section 3.0 of the USACE EA would occur.

The Applicant's Proposed Action. Under this alternative, the installation of the water intake and riprap would occur as proposed by FUD. The proposed action would result in various adverse environmental impacts, and also in potential adverse and beneficial socioeconomic impacts as identified in section 3.0 of the USACE EA.

The Applicant's Final Proposed Action with Special Conditions. Under this alternative, the installation of the water intake and riprap as proposed by FUD would be approved subject to additional recommended special conditions that would minimize unavoidable environmental impacts. To further minimize impacts to the maximum extent practicable, other special Section 404 permit conditions were developed to ensure that the work being performed is the work that was permitted, and that all of the contractors are aware that the work to be performed must conform to the approved plans and conditions. These conditions include minimizing the impact on water quality and on aquatic life in the streams, and minimizing the amount of disturbance in the work area and its vicinity. Providing environmental protection and mitigation of unavoidable impacts, and maintaining the chemical, physical and biological integrity of waters of the U.S. through the control of discharges of dredged or fill material are also conditions (see attachments) of the Section 404 permit. This is the preferred alternative selected by the USACE for permitting. It is also TVA's preferred alternative.

### **Impacts Assessment**

The proposed project would be on the existing FUD WTP site on the Sinking Creek embayment, Knox County, Tennessee. The site, located across the embayment from Concord Park, is characterized by relatively flat topography in a rural area of developing suburbs. There has been a WTP at the site since the mid 1960s.

Installation and operation of the FUD intake could potentially impact aquatic organisms in the Fort Loudoun Reservoir adjacent to and downstream of the site. Construction

impacts would be reduced by conducting the majority of work from a floating barge with short-term storage of spoil material on barges placed adjacent to the work site. Because of measures described above and in the attached EA, environmental impacts including impacts to aquatic and terrestrial biodiversity, and endangered species, would be minor and insignificant.

The project would have no impact to unique soils or air quality. No historic properties or cultural resources would be affected. There are no federal or state listed species indicated or found in the project area, therefore the project would have no effect on endangered or threatened species. Also, there would be minor or temporary impacts to water quality, aquatic habitat, terrestrial habitat, the general visual characteristics, and from the increase in noise at the new facility.

Based on FUD's projected peak day demand in 2020, TVA proposes to limit the level of water withdrawal to 26.9 MGD. If the growth in water demand exceeds this rate of withdrawal, the applicant may ask for a permit revision, which will be reviewed in light of reservoir operating conditions in the future and water withdrawal requests that have been received from other applicants.

Long-term water quality effects from the project, with mitigation as proposed, would be negligible. Adherence to erosion control conditions and BMPs required by USACE and TDEC in their permits would ensure that this project does not impact downstream waters. Considering past, present, and future proposals, there would be only minimal adverse cumulative impacts associated with the water intake installation.

### **Mitigation**

Maximum peak day water withdrawal from all permitted intake facilities at this site is restricted to 26.9 MGD.

TVA's Section 26a approval is contingent upon successful implementation of Best Management Practices for erosion and sediment control including appropriate TVA General Conditions and Standard Conditions.

FUD will ensure its WTP continues to comply with provisions of its National Pollution Discharge Elimination System permit. Work on the new intake facility will be conducted in compliance with all conditions of the Section 401 permit issued by the Tennessee Department of Environment and Conservation and the Section 404 permit issued by USACE.

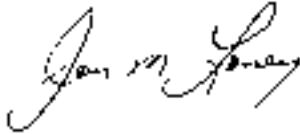
### **Public and Intergovernmental Review**

On January 14, 2005, USACE issued Joint Public Notice No. 05-03 to advertise the proposed activities (see Appendix A in the attached EA). Responses to the public notice were received from the Tennessee Historical Commission (THC) and U.S. Fish and Wildlife Service (USFWS). Comments are attached and are summarized in Section 2.2 and discussed in Section 2.3 of the USACE EA. THC indicated that no National Register of Historic Places listed or eligible properties would be affected by the undertaking. The USFWS stated that their records indicated there were no threatened or endangered species known to occur in the impact area. No other comments were received.

## Conclusion and Findings

On August 26, 2005, the Tennessee Department of Environment and Conservation issued its Aquatic Resources Alteration Permit to FUD authorizing the installation of the raw water intake line and pump station.

TVA has independently reviewed the proposed actions and the accuracy, scope, and content of the USACE-prepared EA and FONSI. Finding the analysis in the USACE EA to be adequate, TVA has decided to adopt the EA. It is attached to this FONSI and incorporated by reference. Based on TVA's analysis and review of the Corps' EA, TVA has concluded that the impacts on the environment have been adequately addressed; and necessary mitigation, including such identified in this FONSI, has been identified. We conclude that the proposed action would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required. This FONSI is contingent upon successful implementation of the mitigation measures imposed by the permitting agencies.



*January 11, 2006*

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Jon M. Loney, Manager  
NEPA Administration  
Environmental Policy and Planning  
Tennessee Valley Authority

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Date Signed

## Special Conditions/Requirements for Water Withdrawals

### Conditions and Requirements

- ☒ 1. Maximum peak day water withdrawal from the permitted intake site is restricted to 26.9 mgd.
- ☒ 2. This § 26a approval expires on January 19, 2021. In order to renew this approval, a Permittee must submit a renewal request to TVA no earlier than eighteen months and no later than 12 months PRIOR to this date. In the event that the approval expires without renewal, all permitted structures shall be removed at no cost to TVA absent TVA's written approval to leave structures in place.
- ☐ 3. Because this is an inter-basin transfer, Permittee is obligated to reimburse TVA for the loss in power benefits resulting from this water withdrawal in the amount of \$\_\_\_\_\_ per mgd for a total of \$\_\_\_\_\_ per year subject to such periodic adjustment by TVA to reflect changes in the estimate of power benefits. The first payment shall be due within 30 days of issuance of this approval as prorated for the remainder of the year, and thereafter shall be due by no later than January 15 of each subsequent year without request by TVA. Any adjustment to the estimate of lost power benefits shall first be discussed with Permittee and shall apply to the next year's payment upon written notice from TVA.
- ☐ 4. Because Permittee is located within TVA's Power Service Area and uses power generated by TVA, \_\_\_\_\_ percent of the assessed lost power benefit shall be waived from year to year until Permittee is otherwise notified in writing that this waiver has been terminated by TVA.
- ☒ 5. NO LATER THAN MARCH 1 of every year following issuance of this approval, Permittee shall report to TVA on the attached form the amount of water withdrawn and used by Permittee.
- ☒ 6. WITHOUT WRITTEN CONCURRENCE FROM TVA, water withdrawn from the Tennessee River System as a result of this § 26a approval SHALL NOT BE SOLD, DISTRIBUTED, OR OTHERWISE TRANSFERRED beyond the utility service territory existing on the date of this approval if the Permittee is a utility, or for other than the use(s) designated in the application by a non-utility Permittee.
- ☒ 7. Water withdrawn from the Tennessee River System as a result of this § 26a approval SHALL NOT BE USED to REPLACE other water supply sources that are sold, distributed or otherwise transferred beyond the utility service territory existing on the date of permit issuance WITHOUT WRITTEN CONCURRENCE FROM TVA.
- ☒ 8. TVA makes no warranty or representation to Permittee or any other entity that the LEVEL of any reservoir or stream will be maintained at or above any elevation. If the water level drops for any reason to a level where Permittee's intake operations or approved structure(s) are impacted, it is the responsibility of the Permittee to have sufficient emergency or contingency plans for alternate sources of water supply. PERMITTEE AGREES THAT IT SHALL MAKE NO CLAIMS AGAINST TVA RELATED TO ANY LOSS OF WATER SUPPLY FOR ANY POSSIBLE REASON, AND SHALL INDEMNIFY AND HOLD TVA HARMLESS FOR CLAIMS MADE BY OTHERS FOR ANY LOSS OF WATER SUPPLY THAT ARISES OUT OF THE ACTIVITIES AUTHORIZED BY THIS APPROVAL.
- ☒ 9. TVA makes no warranty or representation that the FLOW from or WATER QUALITY in any reservoir or stream will be maintained at or above any minimum flow or quality level. If the flow drops or water quality changes for any reason to a level where Permittee's intake operations or other approved activities are impacted, it is the responsibility of the Permittee to detect such changes and have sufficient emergency or contingency plans for alternate sources or treatment of water supply. PERMITTEE AGREES THAT IT SHALL MAKE NO CLAIMS AGAINST TVA FOR ANY LOSS OF INSTREAM FLOW OR DEGRADATION OF RAW WATER QUALITY FOR ANY POSSIBLE REASON, AND SHALL INDEMNIFY AND HOLD TVA HARMLESS FOR CLAIMS MADE BY OTHERS FOR ANY INJURIES OR DAMAGES RELATED TO WATER QUALITY OR LOSS OF WATER SUPPLY THAT ARISES OUT OF THE ACTIVITIES AUTHORIZED BY THE PERMIT.

If any condition of this approval is contested and the condition is removed or voided, this approval is revoked unless TVA, in its sole discretion, agrees in writing to continue it.

## WATER WITHDRAWAL ANNUAL REPORTING FORM

**(This report is due annually to TVA by MARCH 1)**

Complete form and submit to:

Tennessee Valley Authority  
River Operations (WT10-K)  
Att: Manager, Water Supply  
400 W. Summit Hill Dr.  
Knoxville, TN 37902-1499

(Check One)



Utility District / Water Supplier:



Industry



Irrigation

Name:

Address:

City:

State:

ZIP:

Phone: (     )     -    

**Water Treatment Plant:**

Address:

City:

State:

ZIP:

Phone: (     )     -    

**Emergency Contact:**

Name:

Position:

Address:

City:

State:

ZIP:

Phone: (     )     -     Cell: (     )     -    

E-Mail:

**TVA 26a Permit:**

Issue Date:

Expiration Date:

**Calendar Reporting Year:**

Number of operational intakes:		
Location of intakes (waterbody and stream/river mile)		
Location 1 - Waterbody:	Stream/River Mile:	
Location 2 - Waterbody:	Stream/River Mile:	
Location 3 - Waterbody:	Stream/River Mile:	
Pump capacity at each intake (mgd)		
Intake 1:	mgd	
Intake 2:	mgd	
Intake 3:	mgd	
Approximate number of customers		
Residential:	Commercial:	
Approximate number of customers outside the Tennessee Valley watershed		
Residential:	Commercial:	
Annual average withdrawal (mgd):		
Peak day withdrawal (mgd):		
5 Year projected annual average and peak day withdrawal (mgd):		and
Average monthly volume of backwash water discharged (gal):		
Backwash water discharge location		
sewer	waterbody (list):	
Annual average daily volume sold to other water suppliers (name and volume)		
Water Supplier:	Volume:	
Water Supplier:	Volume:	
Water Supplier:	Volume:	
Percent unaccounted for water:		
Source water quality problems:		
Problems with meeting drinking water standards:		
<b>Prepared By</b>		
Name:		
Position:		
Address:		
City:	State:	ZIP:
Phone: (     )     -     Cell: (     )     -		
Date:		

**FINAL ENVIRONMENTAL ASSESSMENT  
STATEMENT OF FINDINGS  
AND  
FINDINGS OF NO SIGNIFICANT IMPACT**

(File No. 4087000)

Applicant: First Utility District of Knox County

**PROPOSED MUNICIPAL RAW WATER INTAKE  
AT MILE 1.0, RIGHT BANK, SINKING CREEK (FORT LOUDON LAKE),  
NEAR CONCORD, IN KNOX COUNTY, TENNESSEE**

**U.S. ARMY CORPS OF ENGINEERS  
Nashville District, Regulatory Branch**

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14 October 2005

Date

Post-it® Fax Note	7671	Date	11/4/05	# of pages	16
To	KERI JOHNSON	From	W. James		
Co./Dept.	TVR-LITTLE	Co.	COE		
Phone #	865-632-1308	Phone #	615-369-7508		
Fax #	865-632-1313	Fax #	615-369-7501		



File No. 4087000

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## 1. Proposed Activity

**1.1 Background.** First Utility District of Knox County (FUD) built a water treatment plant (WTP) and intake system on this property on the Sinking Creek Embayment of Fort Loudoun Lake in the mid 1960s. An intake pipeline was added to the facility in 1986. An additional pump station with associated intake pipes was added in 1988. Presently, FUD provides finished water to southwestern Knox County and the town of Farragut, Tennessee. Most of the county's population growth for a number of years has occurred in the areas outside of the city of Knoxville including the FUD service area. This trend is expected to continue to provide FUD significant customer growth. The FUD currently provides water to approximately 25,600 and 3,800 residential and commercial customers, respectively. The existing WTP has a maximum rated capacity of 21.0 million gallons per day (MGD). During the previous 12 months of operation, the average daily production at the facility reached as high as 14.3 MGD, while the average peak daily production was 18.7 MGD.

**1.2 Description/Project Purpose.** The FUD proposes to construct a 120' long, 42" diameter (diam) ductile iron intake line with a 60" diam. screen in the Sinking Creek embayment of Fort Loudoun Lake. The intake line has been designed for an ultimate capacity of 36 MGD. A raw water pump station would be installed in the immediate upland area. Additional information about the proposed activity is presented in the attached joint public notice (JPN) 05-03 (Appendix A).

**1.3 Statutory Authorities.** Section 10 of the Rivers and Harbors Act of 1899 (Section 10) prohibits the alteration or obstruction of any navigable water of the United States unless authorized by the Secretary of the Army acting through the Chief of Engineers. Sinking Creek, located opposite Tennessee River Mile (TRM) 617.2, right descending bank (RDB), is a navigable water of the United States as defined by 33 CFR Part 329. The excavation/dredging, backfill, and bedding for the intake line as well as the bank stabilization (riprap) activities included in this application have been previously authorized for purposes of Section 10 and Section 404 of the Clean Water Act (33 USC 1344) by existing Nationwide Permits 12 and 13, respectively, [January 15, 2002, Federal Register, Issuance of Nationwide Permits; Notice (67 FR 2020)].

**1.4 Decision Required.** A Department of the Army (DA) permit under Section 10 is required for the work. Therefore, the Corps of Engineers (Corps) must decide on one of the following:

- issuance of a permit for the proposal
- issuance of a permit w/modifications or conditions
- denial of the permit

**1.5 Other Required Approvals.** All construction activities proposed in or along the Tennessee River or its tributaries require Tennessee Valley Authority (TVA) approval under Section 26a of the TVA Act (16 USC 831y-1). TVA has not yet issued the requested 26a permit. In addition, authorization is necessary from the Tennessee Department of Environment and Conservation, Division of Water Pollution Control (TWPC). The proposed utility line bedding/backfill activities and bank stabilization activities must comply with permit requirements of the Tennessee Water Quality Control Act of 1977 (T.C.A. § 69-3-101 et seq). The TWPC issued an Aquatic Resources Alteration Permit (ARAP) for the proposal on 26 August 2005 (Appendix B).

**1.6 Scope of Analysis.** The Corps must determine the proper scope of analysis for National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), Endangered Species Act (ESA), and any other laws related to its permit actions. Once the scope of analysis is

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established, the Corps can address the impacts of the specific activity requiring a DA permit and those portions of the entire project over which we have sufficient control and responsibility to warrant federal review. This is generally coincidental with the definition for "Permit Area". NEPA Implementation Procedures for the Corps Regulatory Program (33 CFR 325, Appendix B, Paragraph 7b) list the typical factors to be considered in determining whether sufficient control and responsibility exists to warrant federal review: (a) whether the regulated activity comprises merely a link in a corridor type project, (b) whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity, (c) the extent to which the entire project will be within Corps jurisdiction, and (d) the extent of cumulative federal control and responsibility. In determining whether sufficient cumulative federal involvement exists to expand the scope of federal action outside the "Permit Area", we should consider whether other federal agencies are required to take federal action under other environmental review laws and/or executive orders.

Once the scope of analysis is determined, alternatives to the proposed action (Section 4) and primary, secondary, and cumulative impacts (Section 3.5) must be considered in the appropriate NEPA analysis. However, when analyzing secondary impacts, the strength of the relationship between those impacts and the regulated portion of the activity should be considered, i.e., whether or not the impacts are likely to occur even if the permit is not issued, in deciding the level of analysis and what weight to give these impacts in the decision. This attenuation should consider whether another project, not requiring a permit, could likely occur at the site or in the vicinity, and whether its impacts would be similar to impacts of the project requiring a permit.

The proposed action consists of the construction of a municipal raw water intake and pump station in the Sinking Creek embayment of Fort Loudoun Lake. Construction of these structures would require excavation, dredging, fill, and installation activities within the Permit Area. The Permit Area for this DA permit application includes the pump station site, shoreline and near-shoreline areas, and the intake line footprint. The Corps will evaluate the adverse direct and indirect impacts of the proposed action within a cumulative context.

**1.7 Site Inspection.** A site inspection is generally performed in connection with the processing of all standard DA permit applications. We are very familiar with this embayment. Project manager J. Ruben Hernandez has visited this general area on several occasions. Mr. Hernandez' last two visits were on 27 February and 29 May 2003 while inspecting Concord and Fox Road marinas (File Nos. 3215400 and 4524000, respectively). Photographs of Mr. Hernandez' inspections have been placed in those files.

## **2.0 Public Involvement Process**

**2.1 General.** On 14 January 2005, the Corps issued Joint Public Notice (JPN) No. 05-03 to advertise the proposed work (Appendix A). The JPN was distributed to a wide list of interested parties that included federal, state, and local agencies, elected officials, private/public organizations, news agencies, commercial navigation interests, adjacent property owners, and individuals. The Tennessee Historical Commission (THC) and U.S. Fish and Wildlife Service (USFWS) provided comments in response to the JPN. The comments have been summarized below and a copy included in Appendix C. Where appropriate, a response follows the comment.

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## 2.2 Public Notice Comments.

2.2.1 On 24 January 2005, THC indicated that after considering the information submitted no National Register of Historic Places (NRHP) listed or eligible properties would be affected by the undertaking. Therefore, it had no objections to the proposal.

2.2.2 By letter dated 10 February 2005, USFWS stated that based on the best evidence available at the present time no federally-listed or proposed threatened or endangered species are known to occur in the impact area. Therefore, it considers the requirements of Section 7 of the Endangered Species Act are fulfilled. In addition, it believes that no significant impacts to fish and wildlife, their habitats, and human uses thereof would result from the proposal. For the above reasons, USFWS would have no objection to the issuance of a permit for the advertised proposal.

## 3.0 Environmental and Public Interest Factors Considered

3.1 Introduction. 33 CFR 320.4(a) states that the decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. All factors that may be relevant to the proposal must be considered (for full list see JPN 05-03, Appendix A). The following sections describe the relevant factors identified and provide a concise description of the probable impacts of the proposed action. The baseline data discussed in this section has been obtained from information provided by the applicant, field investigations, JPN responses, and other sources.

3.2 Previous National Environmental Policy Act (NEPA) Documents. As stated in Section 1.1, FUD built a WTP and intake system on this property in the mid 1960s. Major system improvements occurred in 1986 and 1988. On 9 October 1987, the Corps prepared an Environmental Assessment (1987 Corps EA) to consider the jurisdictional impacts of the 1988 improvements (Appendix D). The 1987 Corps EA will be used as supportive data in assessing the environmental impacts discussed in the following sections of this chapter.

3.3 Physical/Chemical Characteristics and Anticipated Changes. The relevant blocks are checked with a description of the impacts. An unchecked block denotes that the probable impacts are negligible or nonexistent.

(x) substrate - According to the 7 July 2005 geotechnical report prepared by S&ME, Inc., for the construction of the proposed water intake (see Appendix E), substrate consists generally of soft clayey soils with rock fragments. The thickness of the clayey soil layer varies from two to 11'. The construction of the intake pipeline would disturb approximately 5100 square feet (sqft) of relatively biologically unproductive lake bottom--a short term impact. The use of crushed stone and riprap for pipe bedding and backfill materials would provide a more biologically productive medium suitable for colonization by the benthic community--a long term benefit.

( ) currents, circulation or drainage patterns -

(x) suspended particulates, turbidity - The proposed dredging and backfilling activities would suspend substrate particles and result in a minor turbidity increase within the immediate area. This impact would be dissipated by currents and cease upon construction completion. The use of crushed stone and riprap for pipe bedding and backfill materials would permanently protect the disturbed bottom and banks.

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(x) water quality (temperature, color, odor, nutrients, etc) – According to the TVA Reservoir Ecological Health web page ([www.tva.gov/environment/ecohealth/fortloudoun.htm](http://www.tva.gov/environment/ecohealth/fortloudoun.htm)), Fort Loudoun Lake rated "fair" in 2004 (last rated year). The ecological health score for Fort Loudoun was similar to previous years. Dissolved oxygen rated fair at the forebay and good at mid-reservoir. Chlorophyll levels were very high as in previous years and rated poor. The state of Tennessee has issued a bacteriological advisory for the Sinking Creek Embayment upstream of the intake site.

Potentially adverse water quality impacts could result from the in-stream project construction and intake operations. Construction activities could affect water quality by increased turbidity and sedimentation. However, water quality conditions would return to background levels when construction ceases. Potential operational impacts include the cleaning of the intake screens and discharge of back-wash water. These operational impacts would be relatively minor. The overall expected short- and long-term water quality impacts from the project would be minor.

TVA proposes to limit the level of water withdrawal to 26.9 MGD. This is based on TVA's intention to establish a Section 26a permit expiration date of 15 years. The FUD's projected peak day demand in 2020, which is 15 years in the future, is 26.9 MGD. TVA indicated that if the growth in water demand exceeds this rate of withdrawal, FUD may ask for a permit revision, which will be considered in light of reservoir operating conditions in the future and other subsequent withdrawal applications that have been received from other applicants.

( ) flood control functions -

( ) storm, wave, and erosion buffers -

(x) shore erosion and accretion patterns - If any accretion pattern exists currently, it would likely not be affected by the presence of the intake pipeline or by the proposed riprap placement. The protection of the disturbed shoreline with riprap would prevent erosion and sedimentation.

( ) baseflow -

3.4 Biological Characteristics and Anticipated Changes. The relevant blocks are checked with a description of the impacts. An unchecked block denotes that the probable impacts are negligible or nonexistent.

( ) special aquatic sites (wetlands, mudflats, pool and riffle areas, vegetated shallows, sanctuaries, and refuges, as defined in 40 CFR 230.40-45) -

(x) habitat for fish and other aquatic organisms - Fort Loudoun Lake makes available approximately 360 miles of shoreline and about 14,600 acres of water surface. The lake's fish population contains species such as crappie, channel catfish, bluegill, black bass, sauger, smallmouth bass, largemouth bass, striped bass, white bass, and others. The construction of the intake pipeline would disturb approximately 5100 sqft of soft clayey soil which is relatively biologically unproductive. The addition of crushed stone and riprap for pipe bedding and backfill would provide a more biologically productive material suitable for fish habitat and colonization by benthos.

(x) wildlife habitat – The project site is located in the lower part of the Sinking Creek embayment. The embayment contains a mixture of undeveloped land, homes with manicured lawns, marinas, and parks. The extent of human activity in the general vicinity has resulted in low wildlife

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habitat values. Considering the mobility and adaptability of species that may occupy this area, the proposed action would result in minimal short- and long-term wildlife impacts.

(x) endangered or threatened species – A review of existing databases and records did not reveal the presence of any federally listed threatened or endangered species or designated critical habitat at the project site. Based on information obtained from our files and the response from the USFWS (Section 2.2.2), we have determined that the proposal would have no effect on these species or their designated critical habitat.

(x) biological availability of possible contaminants in dredged or fill material – Sediment samples obtained from the geotechnical exploration were tested for pesticides, polychlorinated biphenyls (PCBs), and 13 metals. Laboratory results conducted revealed that none of the found contaminants exceeded limits of concern as established by law.

3.5 Human Use Characteristics and Anticipated Impacts. The relevant blocks are checked with a description of the impacts. An unchecked block denotes that the probable impacts are negligible or nonexistent.

(x) existing and potential water supplies; water conservation - No records were found in our permit database of additional municipal or industrial raw water intakes in this embayment. The construction of the intake pipeline would have minimal impacts on the existing FUD intake which is located upstream. Water conservation (storing, saving, reducing or recycling water) would not be affected by the proposed action.

(x) water-related recreation - Fort Loudoun Lake, a Tennessee River main-stem reservoir, is approximately 50 miles long, has 14,600 acres of surface area, and 360 miles of shoreline. Typical normal summer and winter pool target levels are Elevation (El.) 813 and 807, respectively. Several marinas, resorts, state/municipal parks, and camping areas exist along the lake's shores. Two large commercial marinas exist on the Sinking Creek embayment. Concord Marina is located at Mile 0.6 on the left descending bank (LDB) and Fox Road Marina is located at Mile 1.8 on the RDB. Both marinas accommodate numerous boats and have launch ramp facilities.

The proposed intake pipeline would extend out approximately 120' measured from the normal summer pool (NSP) shoreline. Since the embayment is approximately 850' wide at this location, the presence of construction floating plant would offer only a minor impediment to recreational traffic in the embayment. Floating plant would be required to observe requirements of the Inland Navigation Rules regarding proper marking and lighting. In the long-term, there would be no impacts associated with the pipes and water intakes because of the depth of water above the pipes at low flows. Other recreational facilities and water-oriented recreational opportunities in the area would not be affected. Generally, the availability of more potable water in the long-term would enhance recreational development potential in the FUD service area.

(x) aesthetics – The proposed activity is located at the existing FUD WTP site. The WTP and an intake system have been in existence since the mid 1960s. An additional pump station and associated intake piping were constructed in 1988. The construction of the intake pipeline and pump station would result in a relatively minor change in the general visual characteristics of the area. Therefore, the aesthetic impact would be minimal.

( ) traffic/transportation patterns –

File No. 4087000

(x) energy consumption or generation - The proposed action would require additional energy consumption. However, the increase would be minimal. The TVA, electric power generation agency for this area, has abundant generation capacity to supply the extra load.

(x) navigation - The proposed intake pipeline would be located on a relatively wide (approximately 850') reach of the Sinking Creek embayment. This reach is fairly straight, and navigation occurs from bank to bank. The screens located at the end of the submerged intake pipeline would have a top elevation of 795.5, i.e., 11.5' below Fort Loudoun Lake's normal winter pool (NWP), El. 807. Due to the ample navigational clearances over the intake screens, the possibility of a vessel impacting the structure is negligible to nonexistent. The contractor would be advised to mark/light construction floating plant for maximum visibility of boaters. Boats would have to reduce speed and navigate through the construction zone with caution. Therefore, impacts on recreational navigation would be relatively minor. No impact would occur on commercial navigation.

(x) safety - Issues that relate to safety have been discussed under the "water-related recreation" and "navigation" paragraphs above.

(x) air quality - The proposed action would only result in minimal direct emissions. A conformity applicability determination pursuant to regulations implementing Section 176(c) of the Clean Air Act has been made in Section 5.1.

(x) noise - Noise levels would increase slightly above background values during the construction phase. The operational phase would result in minor long-term increases above background levels. Taking into account that the WTP and its intrinsic noises has existed at this site since the mid 1960s, the degree of recreational boating, and the considerable distance to the nearest residence, short- and long-term adverse noise impacts would be minimal.

( ) historic properties and cultural values -

(x) land use classification - The FUD has built and operated a WTP and intake system on this property since the mid 1960s. The proposed action would have minimal impacts on land use classification.

( ) conservation -

(x) economics - The FUD has stated that it provides finished water to approximately 29,400 residential and commercial customers in southwestern Knox County and the town of Farragut, Tennessee. Most of the county's population growth for a number of years has occurred in the areas outside of the City of Knoxville including the FUD service area. This trend is expected to continue to provide significant customer growth for the FUD. The proposal would provide a short-term stimulus to the local economy due to the construction jobs and related sales of goods and services. The increased availability of potable water would help sustain the present/future residential, commercial, and industrial infrastructure needs of the FUD service area and would likely promote economic growth. In addition, the proposal could result in an increase in property values in those areas due to ample future supplies of potable water.

( ) food and fiber production -

File No. 4087000

(x) general environmental concerns - This is a broad factor almost synonymous with the area's quality of life. All the relevant issues falling under this heading have been evaluated in this document. No public/private agency, group, or individual expressed concerns for the proposed activities. Special conditions have been added to minimize the unavoidable adverse environmental impacts identified.

( ) mineral needs -

(x) consideration of private property - Corps regulations at 33 CFR 320.4(g) state that authorization of work by the DA does not convey any property rights, either in real estate or material, or any exclusive privileges. Furthermore, a DA permit does not authorize any injury to property or invasion of rights or any infringement of federal, state or local laws or regulations. The same regulation also states that a riparian landowner has a general right of access to navigable waters of the U.S. However, this right of access is weighed through the DA public interest review process against the similar rights of access held by nearby riparian landowners and to the general public's right of navigation on the water surface. The FUD has operated a WTP and an intake system at this property since the mid 1960s. We are satisfied that private property rights have been adequately considered and are not an issue.

( ) floodplain values -

( ) other -

3.6 Cumulative and Secondary Impacts. The Council on Environmental Quality regulations define cumulative impact as "the environmental impact which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

The Corps considers every DA permit application on its own merits and assesses its environmental impacts within the proper scope of review for NEPA purposes. As indicated in Section 1.6, the scope of analysis for this DA permit application is limited to the Permit Area (i.e., the pump station site, shoreline and near-shoreline areas, and the intake line footprint). The Permit Area impacts described in this document would result in minimal adverse cumulative impacts on areas within our NEPA scope of review. A discussion of these impacts has been presented in Section 3 above. If a decision is made to issue the DA permit, special permit conditions will be incorporated to further minimize on-site impacts.

No records were found in our permit database of additional municipal or industrial raw water intakes in the Sinking Creek embayment. However, there are approximately 5 industrial/municipal raw water intakes in the Fort Loudoun Lake pool. In comparison, approximately 18 such raw water intakes exist in the Watts Bar Lake pool. We do not anticipate a large number of DA permit applications involving municipal water supply intakes in the town of Farragut or southwestern Knoxville vicinities. A 26.9 MGD level of water withdrawal, combined with other existing and reasonably foreseeable future water withdrawals, would not affect the operation of Fort Loudoun Reservoir. When considering the impacts from past, present, and reasonably foreseeable future proposals, the cumulative and secondary impacts from this proposal are considered minor.



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## 4.0 Alternatives

4.1 Introduction. This section discusses alternatives as required by 33 CFR 320.4(a)(2). The relevant environmental issues identified in Section 3.0 were used to formulate the alternatives. The alternatives considered in detail are described in Section 4.2 and their impacts compared in Section 4.3. Other alternatives not considered in detail are discussed in Section 4.4.

### 4.2 Description of Alternatives.

4.2.1 No Action. This alternative is one that results in no construction or work requiring a Corps permit. No Action would be brought by FUD electing to modify its proposal to avoid jurisdictional work, by denial of the permit, or withdrawal of the permit application.

4.2.2 Applicant's Proposed Action. This alternative consists of the proposal described in Section 1.2.

4.2.3 Applicant's Proposed Action with Added Special Conditions. This alternative consists of the Applicant's Proposed Action described in Section 4.2.2 above with the inclusion of special conditions to minimize the unavoidable environmental impacts identified in this document to the maximum extent practicable.

### 4.3 Comparison of Alternatives.

4.3.1 No Action. This alternative would result if the construction of the intake pipeline and pump station do not occur or if work occurs outside waters of the United States. No Action would be brought about by a denial of the DA permit. The potential environmental impacts described in Section 3.0 would not occur. Conversely, the expected socio-economic benefits also described in that section would not be achieved. With No Action, FUD's current water withdrawal rates and WTP production would likely continue. Selection of the No Action alternative would not satisfy FUD's stated purpose and need.

4.3.2 Applicant's Proposed Action. The proposal described in Section 1.1 would have various potentially adverse environmental effects and potentially adverse and beneficial socio-economic effects. These potentially adverse and beneficial effects have been listed in Section 3.0 above.

4.3.3 Applicant's Proposed Action with Added Special Conditions. This alternative would result in similar impacts and benefits to the alternative described in Section 4.3.2 above. Special permit conditions have been developed (see below) to minimize the identified impacts to the extent practicable. The conditions are reasonably enforceable and would afford appropriate and practicable environmental protection. Conditions have been specifically added to minimize adverse impacts on navigation, water quality, and the aquatic environment.

The following special permit conditions are necessary to satisfy legal and public interest requirements. Some of these conditions help clarify the permit application and afford appropriate and practicable environmental protection.

- The work must be conducted in accordance with the plans and information submitted in support of the proposed work, as attached. Justification: *Clarify the permit application.*

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- You must have a copy of this permit available on the site and ensure all contractors are aware of its conditions and abide by them. *Recommended at 33 CFR 325, Appendix A.*
- Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States. *Recommended at 33 CFR 325, Appendix A.*
- Any barges and/or craft engaged in the construction activities must display lights and signals compliant with requirements of the current "Inland Navigation Rules" and must be positioned as close to the shoreline as possible to provide maximum horizontal navigational clearance at the channel at all times. *Public interest requirement to protect navigation.*
- The disturbance to riparian vegetation shall be kept to a minimum during construction. *Minimize impacts on wildlife habitat, water quality, and the aquatic environment.*
- All disturbed riverbanks shall be riprapped as soon as practicable to prevent erosion. *Minimize impacts on water quality and the aquatic environment.*
- You must institute and maintain a strict erosion and sediment control program for the life of the project and ensure that all disturbed areas are properly seeded, riprapped, or otherwise stabilized as soon as practicable to prevent erosion. *Minimize impacts on water quality and the aquatic environment.*
- The discharge shall consist of suitable material free from toxic pollutants in toxic amounts. *Minimize impacts on water quality and the aquatic environment.*
- The fill created by the discharge shall be properly maintained to prevent erosion and other non-point sources of pollution. *Minimize impacts on water quality and the aquatic environment.*
- To provide adequate navigational depths for recreational craft, no portion of the exposed intake pipeline or its components (anchors, supports, screens, etc.) will be constructed higher than El. 795.5, i.e., 11.5' below normal winter pool, El. 807. *Public interest requirement to protect navigation.*
- Riprap material shall be quarry-run stone or its equivalent, i.e., clean material free of waste metal products, organic materials, unsightly debris, etc. In addition, riprap size and weight shall be adequate to withstand the expected channel velocities. *Minimize impacts on water quality and the aquatic environment.*
- All excess excavated material not suitable for pipeline bedding and backfill shall be removed upland above El. 816.5 (approximately the 100-year flood elevation in this area) and properly contained and stabilized to prevent re-entry into the waterway. *Minimize impacts on water quality and the aquatic environment.*
- You must post and maintain on the bank in front (or on the face) of the pump station a "Submerged Utility" sign that can be seen from the waterway in accordance with the enclosed plan, marked Exhibit B. *Satisfy legal and public interest requirements.*
- Before your contractor demobilizes floating plant equipment from the site, a joint final inspection must be scheduled to determine if all underwater work described in this permit has been successfully completed. *Public interest requirement to protect navigation.*

File No. 4087000

- Certified "as-built" drawings of the raw water intake pipeline shall be furnished this office within 60 days of completion of construction showing all final locations, dimensions, backfill details, and elevations. *Public interest requirement to protect navigation.*

4.4 Alternatives not Considered in Detail. Other practicable alternatives exist which would involve different designs (size, shape, height), materials (metal, composites, etc.), sites, or sources (purchased water from other water utilities or from wells). The first three options would result in a degree of impact commensurate or higher than that of the proposed action. The fourth option would likely result in higher capital/operational costs. All of the alternative designs would require DA/TVA permits and would be subject to the agencies' review processes. In addition, these alternatives might not satisfy FUD's stated purpose and need.

## 5.0 Findings

5.1 Clean Air Act General Conformity Rule Review. The proposed project has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. Knox County, Tennessee, is in "nonattainment" status for ozone (8-hour) and particulate matter (size < 2.5 micrometers). However, it has been determined that the activities proposed under this permit will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within USACE's continuing program responsibility, and cannot be practically controlled by the agency. For these reasons, a conformity determination is not required for this permit.

5.2 Environmental Justice. Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. Through our public involvement process (Section 2), we have offered adjacent property owners, local groups, community leaders, elected officials, agencies, and general public (includes low-income and minority populations) an opportunity to express their views and opinions. No one identifying himself/herself as a low-income person indicated any objection to the proposal. If any impact on minority or low-income populations does occur, it would not have disproportionately high and adverse human health or environmental effects. Therefore, the requirements and provisions of EO 12898 have been met.

5.3 Public Hearing. No requests for a public hearing to consider the proposal were received during the public involvement period.

5.4 Findings of No Significant Impact. After fully considering the relevant environmental factors discussed in this document, information obtained from the applicant and cooperating public agencies, I have concluded that issuance or denial of the requested permit would not constitute a major federal action that would significantly affect the quality of the human environment. This constitutes a Findings of No Significant Impact (FONSI). Therefore, the preparation of an Environmental Impact Statement is not required. This FONSI was prepared pursuant to paragraph 7a of Appendix B, 33 CFR 325.

5.5 Public Interest Determination. I have reviewed the application, responses to the JPN, and the information contained in this document. Three alternatives were evaluated, "No Action", "Applicant's Proposed Action", and "Applicant's Proposed Action with Added Special Conditions".

File No. 4087000

The "Applicant's Proposed Action with Added Special Conditions" alternative would result in relatively minor environmental impacts. The special conditions developed in this document and listed in Section 4.3.3 would reduce the unavoidable environmental impacts to the maximum extent practicable. The proposal would provide substantial public and private socioeconomic benefits. It would benefit the public by providing a more reliable water supply, improving safety/health, and by providing short- and long-term economic stimuli. The applicant's stated purpose and need of increasing the supply of potable water to serve southwestern Knoxville, the town of Farragut, and other potential customers would also be met. Having weighed the potential benefits that may be accrued against the reasonably foreseeable detrimental effects, I conclude that permit issuance would not be contrary to the public interest.

FOR THE COMMANDER:

10/14/2005

Date



William L. James  
Chief, Eastern Regulatory Section  
Regulatory Branch  
Operations Division



# 4087000

→ J1218

✓

1/27

**TENNESSEE HISTORICAL COMMISSION**  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
2941 LEBANON ROAD  
NASHVILLE, TN 37243-0442  
(615) 532-1550

January 24, 2005

Mr. J. Ruben Hernandez  
U.S. Army Corps of Engineers, Nashville District  
Regulatory Branch  
3701 Bell Road  
Nashville, Tennessee 37214

27 JAN 2005

RE: COE-N, PN# 05-03/INTAKE/SINKING CREEK 1.0, UNINCORPORATED, KOX COUNTY

Dear Mr. Hernandez:

The Tennessee State Historic Preservation Office has reviewed the above-referenced undertaking received on Tuesday, January 18, 2005 for compliance by the participating federal agency or applicant for federal assistance with Section 106 of the National Historic Preservation Act. The Procedures for implementing Section 106 of the Act are codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

After considering the documentation submitted, it is our opinion that there are no National Register of Historic Places listed or eligible properties affected by this undertaking. This determination is made either because of the location, scope and/or nature of the undertaking, and/or because of the size of the area of potential effect; or because no listed or eligible properties exist in the area of potential effect; or because the undertaking will not alter any characteristics of an identified eligible or listed property that qualify the property for listing in the National Register or alter such property's location, setting or use. Therefore, this office has no objections to your proceeding with the project.

If you are applying for federal funds, license or permit, you should submit this letter as evidence of compliance with Section 106 to the appropriate federal agency, which, in turn, should contact this office as required by 36 CFR 800. You may direct questions or comments to Jennifer M. Barnett (615) 741-1588, ext. 17. This office appreciates your cooperation.

Sincerely,

Herbert L. Harper  
Executive Director and  
Deputy State Historic  
Preservation Officer

HLH/jmb



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

446 Neal Street  
Cookeville, TN 38501

February 10, 2005

15 FEB 2005

Lt. Colonel Byron G. Jorns  
District Engineer  
U.S. Army Corps of Engineers  
3701 Bell Road  
Nashville, Tennessee 37214

Attention: Mr. J. Ruben Hernandez, Regulatory Branch

Subject: Public Notice No. 05-03. First Utility District of Knox County, Proposed Municipal Raw Water Intake at Mile 1.0, Right Bank, Sinking Creek, Knox County, Tennessee.

Dear Colonel Jorns:

Fish and Wildlife Service personnel have reviewed the subject public notice. The proposed project would involve the construction of a raw water intake structure on the right descending bank of Sinking Creek at Mile 1.0, Fort Loudoun Lake, Knox County, Tennessee. The applicant (First Utility District of Knox County) proposes improvements that would increase the existing facility's water intake capacity from the current 21.0 million gallons per day to 36.0 million gallons per day. The placement of a 42-inch diameter pipe would require the dredging/excavation of approximately 800 cubic yards of material. The applicant proposes to sidecast the excavated material in the lake bottom with silt curtains installed to reduce disturbance in the surrounding area. Any excess material would be removed upland and properly contained and stabilized to prevent reentry into the waterway. The following constitute the comments of the U.S. Department of the Interior, provided in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the project. We note, however, that collection records available to the Service may not be all-inclusive. Our data base is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality. However, based on the best information available at this time, we believe that the requirements of section 7 of the Endangered Species Act of 1973, as amended, are fulfilled.


Obligations under section 7 of the Act must be reconsidered if (1) new information reveals impacts of the action that may affect listed species or critical habitat in a manner not previously considered, (2) the action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the action.

We do not anticipate significant adverse impacts to fish and wildlife or their habitats as a result of this project. Therefore, the Service has no objection to the issuance of a permit for the work described in the subject public notice.

Thank you for this opportunity to review the subject notice. If you have any questions or if we can be of further assistance, please contact Robbie Sykes of my staff at 931/528-6481, ext. 209.

Sincerely,



 Lee A. Barclay, Ph.D.  
Field Supervisor

xc: Robert Todd, TWRA, Nashville, TN  
Dan Eagar, TDEC, Nashville, TN  
Darryl Williams, EPA, Atlanta, GA

October 26, 2005

Regulatory Branch

SUBJECT: File No. 4087000; Proposed Municipal Raw Water Intake at Mile 1.0, Right Bank, Sinking Creek (Fort Loudoun Lake), in Knox County, Tennessee

Mr. Ryan Blake  
Jordan, Jones, and Goulding, Inc.  
9725 Cogdill Road, Suite 101  
Knoxville, Tennessee 37932

Dear Mr. Blake:

Enclosed is the signed Permit authorizing the subject work.

Your attention is invited to special conditions 14 & 15 of the Permit. **Special Condition 14** reads: "Before your contractor demobilizes floating plant equipment from the site, a joint final inspection must be scheduled to determine if all underwater work described in this permit has been successfully completed." In addition, **Special Condition 15** reads: "Certified *as-built* drawings of the raw water intake pipeline shall be furnished this office within 60 days of completion of construction showing all final locations, dimensions, backfill details, and elevations."

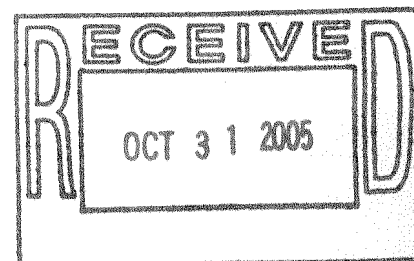
As soon as the authorized work has been completed and all the permit conditions have been met (including any required mitigation), you must sign the enclosed "Compliance Certification" and send it back to the Corps office checked.

If changes in the location or plans of the proposed work are necessary, revised plans should be submitted promptly to this office. No deviation should be made in the approved plans without first obtaining approval from this office.

Before you begin construction, you must also obtain approval from the Tennessee Valley Authority.

Sincerely,

J. Ruben Hernandez  
Project Manager  
Operations Division





Enclosures

Copy Furnished (w/permit):

Ms. Keri Johnson  
Tennessee Valley Authority  
Little Tennessee Watershed Team  
260 Interchange Park Drive (LCB 1A-LCT)  
Lenoir City, Tennessee 37772

Mr. Trent Thomas  
Tennessee Department of Environment  
and Conservation  
Div. Water Pollution Control (7th Fl)  
401 Church Street, L & C Annex  
Nashville, Tennessee 37243-1534

## DEPARTMENT OF THE ARMY PERMIT

**PERMITTEE:** First Utility District of Knox County

**PERMIT NUMBER:** 4087000

**ISSUING OFFICE:** Nashville District Corps of Engineers

**NOTE:** The term you and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**PROJECT DESCRIPTION:** See enclosed "Description of Work", Exhibit A.

**PROJECT LOCATION:** Mile 1.0, right bank, Sinking Creek (opposite Tennessee River Mile 617.2R), Fort Loudoun Lake, near Concord, in Knox County, Tennessee, Lat 35° 52' 14", Long 84° 07' 37", Concord-TN, USGS Quad Map.

### PERMIT CONDITIONS

#### **GENERAL CONDITIONS:**

1. The time limit for completing the work authorized ends on OCTOBER 26, 2010. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you must make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity, or should you desire to abandon it without a good faith transfer, you may obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archaeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

[33 CFR 325 (Appendix A)]

7. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

**SPECIAL CONDITIONS:** (SEE CONTINUATION SHEET 1, SPECIAL CONDITIONS)

**FURTHER INFORMATION:**

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

- (x) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
- ( ) Section 404 of the Clean Water Act (33 U.S.C. 1344)
- ( ) Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413)

2. Limits of this authorization.

- a. This permit does not obviate the need to obtain other Federal, state or local authorizations required by law.
- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as this specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

*Sam Alwedeh*, Dir of Engrs 19 Oct 05  
(PERMITTEE) (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Steven J. Roemhildt, P.E., LTC, Corps of Engineers 26 Oct 05  
(DISTRICT ENGINEER) (DATE)

By: *J. Ruben Hernandez*  
J. Ruben Hernandez  
Project Manager  
Operations Division

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
(TRANSFeree) (DATE)

**CONTINUATION SHEET 1  
SPECIAL CONDITIONS**

1. The work must be conducted in accordance with the plans and information submitted in support of the proposed work, as attached.
2. You must have a copy of this permit available on the site and ensure all contractors are aware of its conditions and abide by them.
3. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.
4. Any barges and/or craft engaged in the construction activities must display lights and signals compliant with requirements of the current "Inland Navigation Rules" and must be positioned as close to the shoreline as possible to provide maximum horizontal navigational clearance at the channel at all times.
5. The disturbance to riparian vegetation shall be kept to a minimum during construction.
6. All disturbed riverbanks shall be riprapped as soon as practicable to prevent erosion.
7. You must institute and maintain a strict erosion and sediment control program for the life of the project and ensure that all disturbed areas are properly seeded, riprapped, or otherwise stabilized as soon as practicable to prevent erosion.
8. The discharge shall consist of suitable material free from toxic pollutants in toxic amounts.
9. The fill created by the discharge shall be properly maintained to prevent erosion and other non-point sources of pollution.
10. To provide adequate navigational depths for recreational craft, no portion of the exposed intake pipeline or its components (anchors, supports, screens, etc.) will be constructed higher than El. 795.5, i.e., 11.5' below normal winter pool, El. 807.
11. Riprap material shall be quarry-run stone or its equivalent, i.e., clean material free of waste metal products, organic materials, unsightly debris, etc. In addition, riprap size and weight shall be adequate to withstand the expected channel velocities.
12. All excess excavated material not suitable for pipeline bedding and backfill shall be removed upland above El. 816.5 (approximately the 100-year flood elevation in this area) and properly contained and stabilized to prevent re-entry into the waterway.
13. You must post and maintain on the bank in front (or on the face) of the pump station a "Submerged Utility" sign that can be seen from the waterway in accordance with the enclosed plan, marked Exhibit B.
14. Before your contractor demobilizes floating plant equipment from the site, a joint final inspection must be scheduled to determine if all underwater work described in this permit has been successfully completed.
15. Certified "as-built" drawings of the raw water intake pipeline shall be furnished this office within 60 days of completion of construction showing all final locations, dimensions, backfill details, and elevations.

**DESCRIPTION OF WORK  
EXHIBIT A**

The proposed work consists of the construction of a 42" diameter (Diam) ductile iron (DI) intake line that will extend into the Sinking Creek embayment of Fort Loudon Lake. A 60" Diam. "wedge-wire" screen, with 1/8" openings and a thru-flow velocity of 0.5 feet/second, will be installed at the end of the intake line (centerline elevation of 793.0) at a point approximately 120' from the normal summer pool (NSP) shoreline Elevation (El) 813.0. The top of the screen will be at El. 795.5, i.e., 11.5' below Fort Loudoun Lake's normal winter pool, El. 807.0. An 8" Diam. DI airline will also be installed parallel to the 42" line for a compressed air backwash system. The volume of material to be excavated/dredged below NSP will be approximately 800 cubic yards (CY). In addition, approximately 350 CY of riprap will be placed over the pipe. Native material will be placed over some length of the riprap where conditions allow. Construction will be conducted from a floating plant during the winter drawdown. The excavated/dredged material will be sidecasted in the bottom of the lake with silt curtains installed to reduce disturbance in the surrounding area. Any excess excavated/dredged material will be removed upland and properly contained and stabilized to prevent reentry into the waterway. The material may be also disposed off in an approved landfill.

The intake line is designed for an ultimate capacity of 36 MGD. A raw water pump station will be installed upland a short distance away. The proposed pump station will have an ultimate capacity of 36 MGD. Initially, one 150-HP, variable-speed, 9.0 MGD vertical turbine pumps and one 150-HP, constant speed 9.0 MGD vertical turbine pump will be installed. Once the new intake is fully operational, the remaining intakes will be used as necessary to meet daily demands.

# **WARNING DO NOT ANCHOR OR DREDGE**

**SUBMERGED  
UTILITY LINE**

**NAME OF COMPANY & TELEPHONE NUMBER**

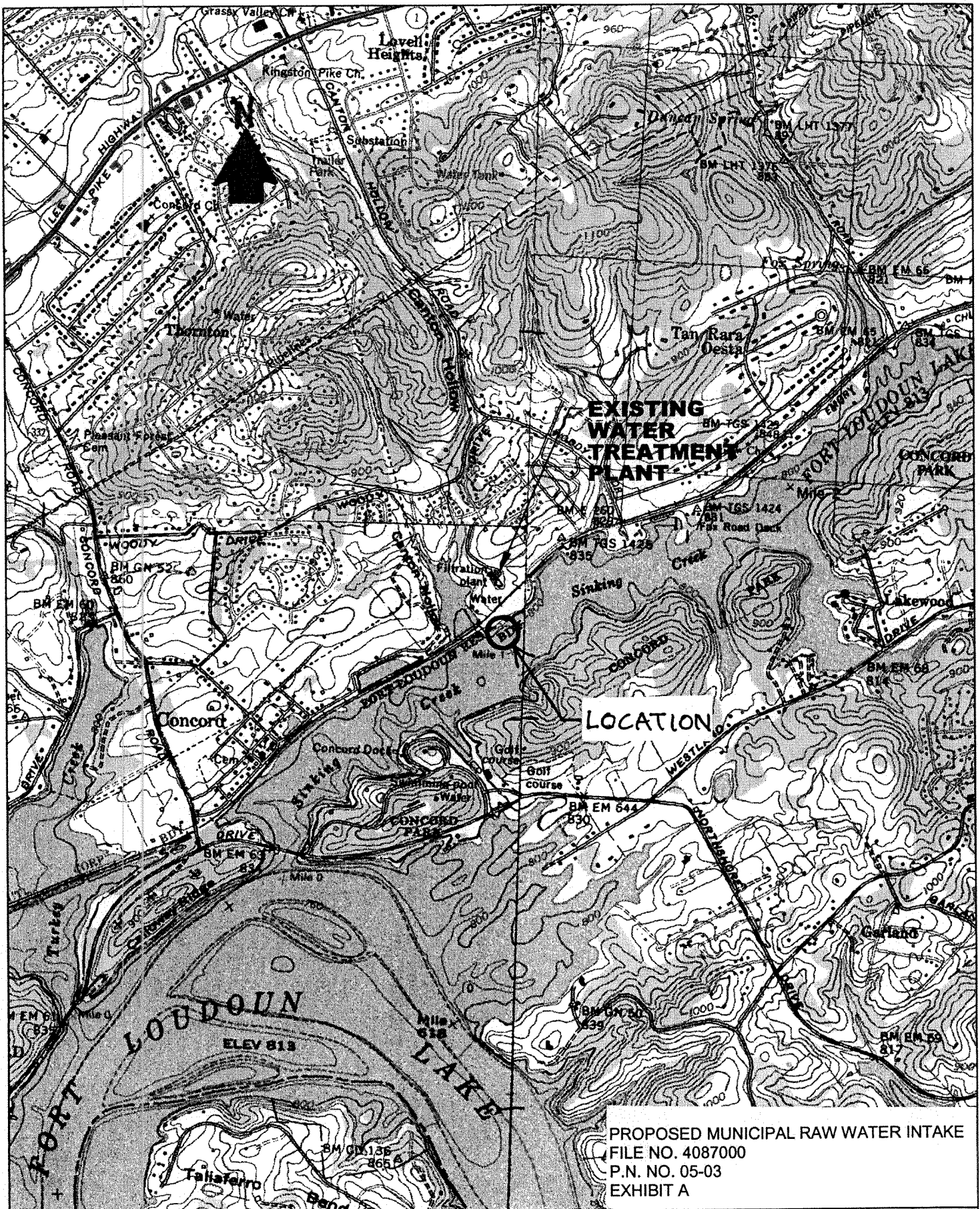
8'

4'

## **NOTES:**

1. ALL LETTERING ON SIGN MUST BE BLACK COLOR - BLOCK STYLE ON BACKGROUND OF WHITE
2. SIGNS MARKING CROSSINGS OF NATURAL OR OTHER GASES AND HAZARDOUS LIQUIDS WILL HAVE ORANGE BORDER IN COMPLIANCE WITH DOT REGULATIONS
3. THE WORD "WARNING" MAY BE CHANGES TO "CAUTION" OR "DANGER"
4. THE SIZE OF SIGN MUST CONFORM TO DIMENSIONS SHOWN ON SAMPLE ABOVE

**EXHIBIT B  
FILE NO. 4087000**



**JORDAN  
JONES &  
GOULDING**

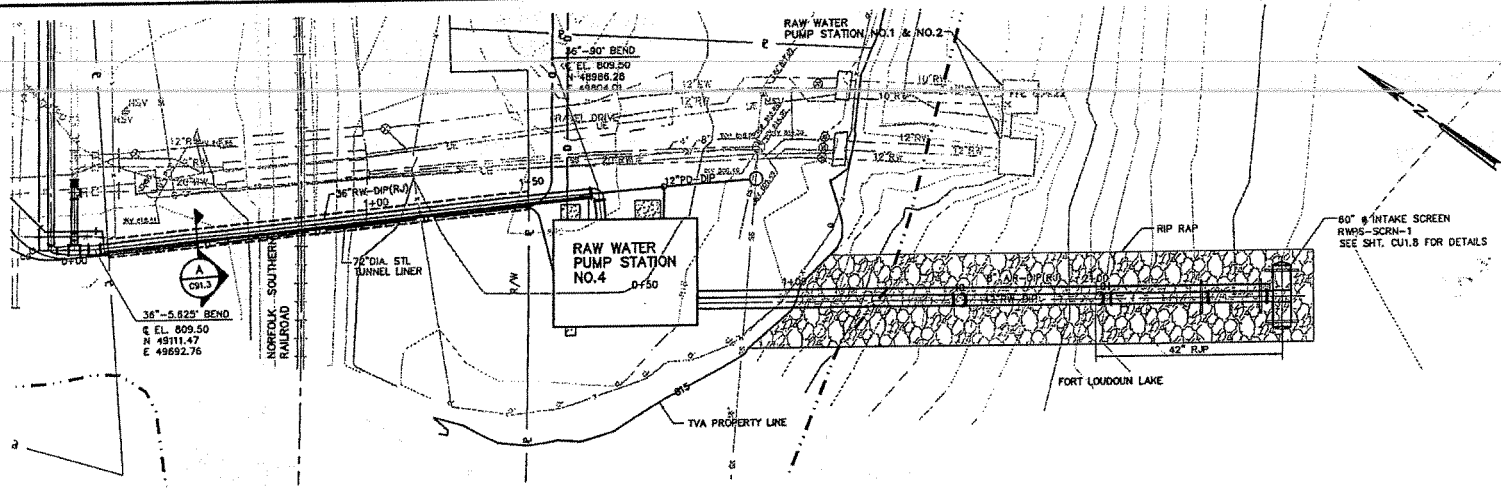
FIRST UTILITY DISTRICT  
OF KNOX COUNTY

WATER TREATMENT PLANT

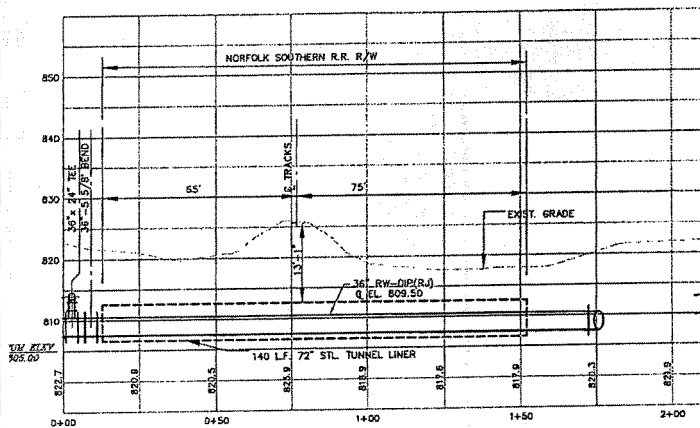
DATE : SEPTEMBER 2004  
 SCALE : 1" = 2000'  
 JOB NO.: 2092-081

FIGURE 1

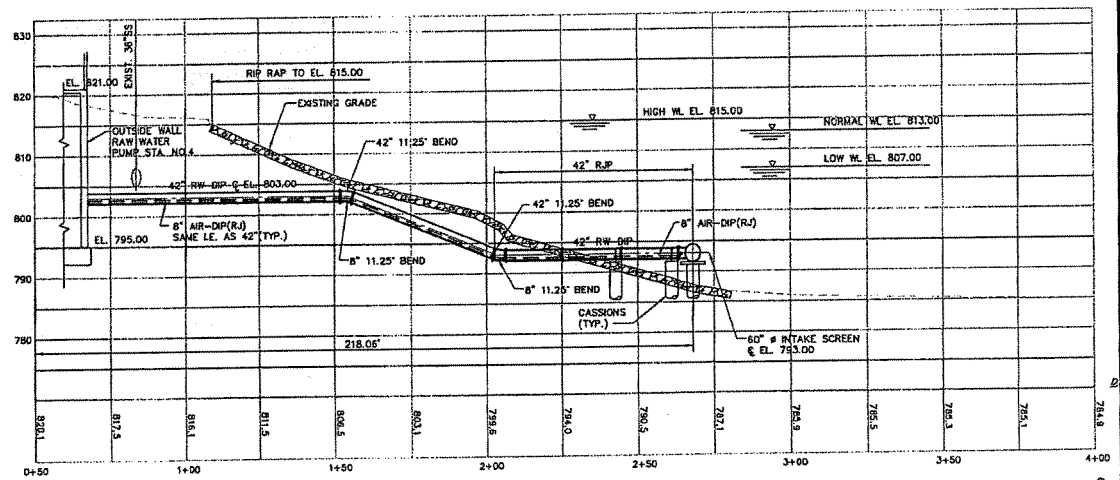




PLAN  
1" = 20'



36"RW RR CROSSING PROFILE  
1"=20' HORIZ.  
1"=10' VERT.



42"RW INTAKE PROFILE  
1"=20' HORIZ.  
1"=10' VERT.

NOTE:  
1. BURIED DUCTILE IRON PIPELINES MARKED  
DIP(RJ) REQUIRE THRUST RESTRAINT AT ALL  
FITTINGS. PROVIDE RESTRAINED JOINT PIPE (AS  
SPECIFIED) FOR A MINIMUM LENGTH EA. SIDE OF  
ALL FITTINGS & VALVES AS SHOWN IN DIP  
RESTRAINT SCH. ON SHT. C91.3.

NO.	DATE	DESCRIPTION OF REVISION
2	01-05-05	ADDED RIP RAP PLAN AND PROFILE
1	12-21-04	GENERAL REVISIONS
0	09-06-04	INITIAL ISSUE

**JORDAN  
JONES &  
GOULDING**

**FIRST UTILITY DISTRICT  
OF KNOX COUNTY**



WATER TREATMENT PLANT EXPANSION TO 34 MGD

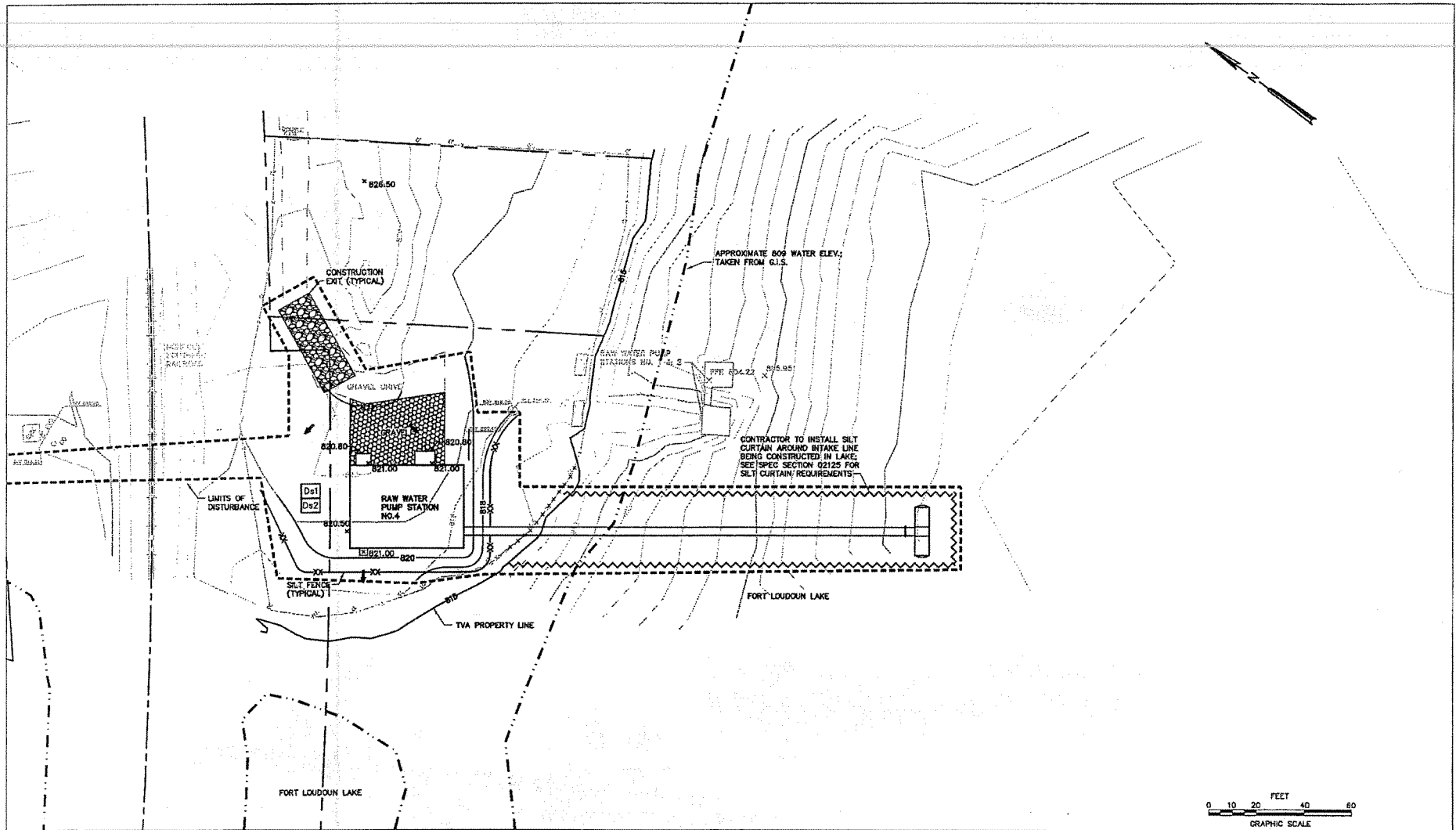
**RAW WATER SCREEN  
PLAN AND PROFILE**

DESIGNED: PNB	CHECKED:	DATE: SEPTEMBER 2004	CU1.7	2
DRAWN: LT	JOB NO. 2092.081	SCALE: 1"=20'	SHEET	REV

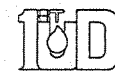
PROPOSED MUNICIPAL RAW WATER INTAKE  
FILE NO. 4087000  
P.N. NO. 05-03  
EXHIBIT B

THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

MATCH LINE - SEE SHEET CE1.4



NO.	DATE	DESCRIPTION OF REVISION
0	09-28-04	INITIAL ISSUE



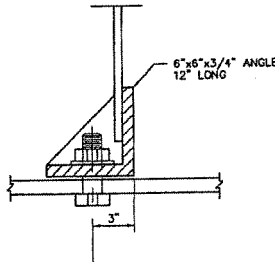
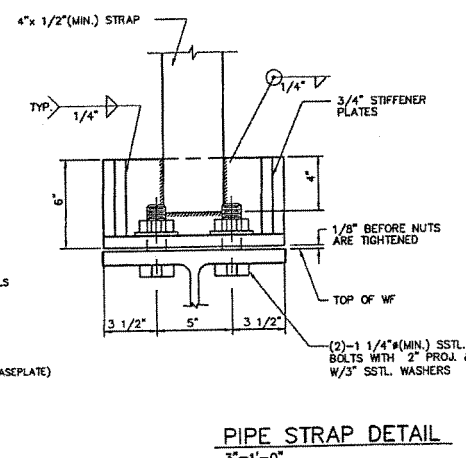
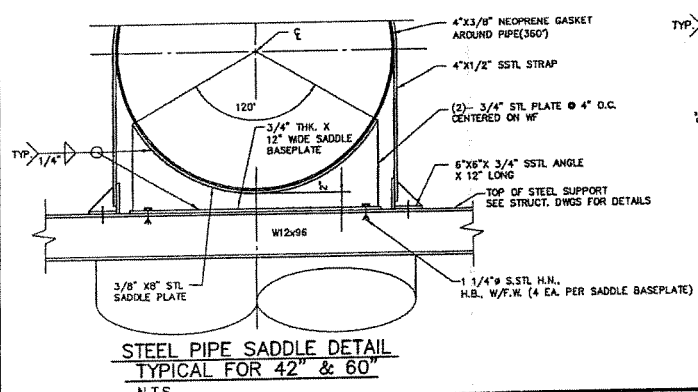
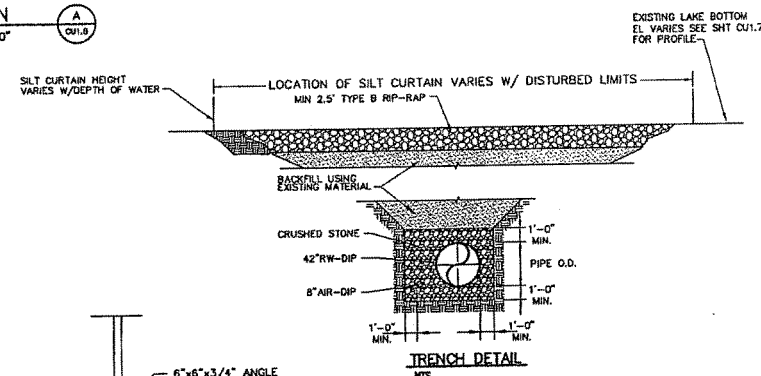
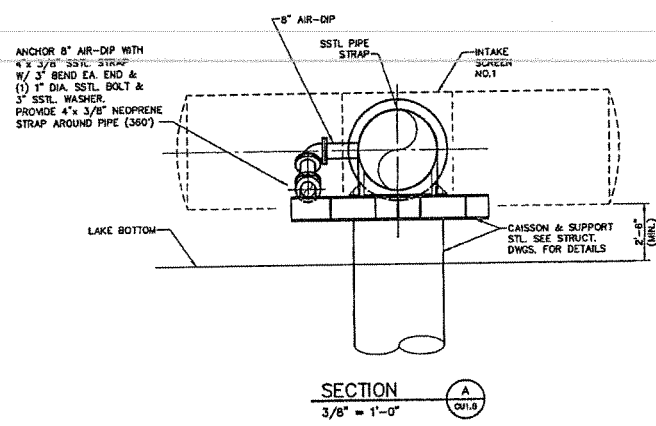
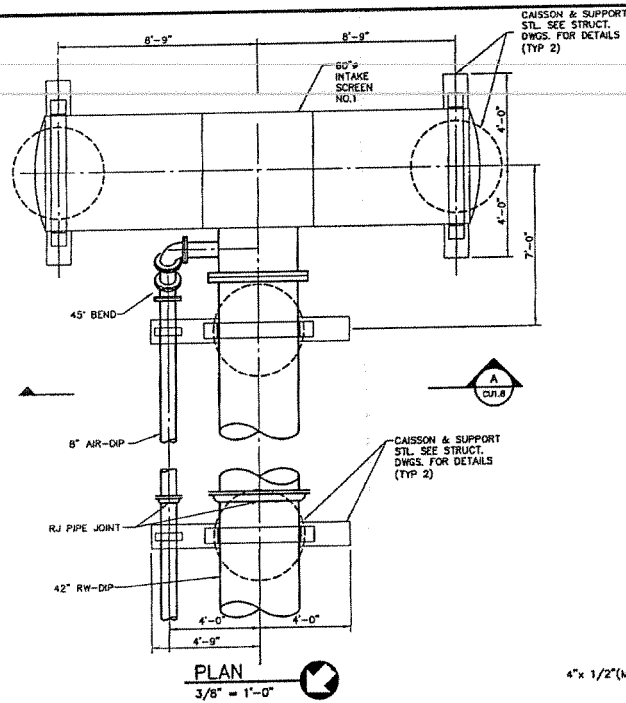
FIRST UTILITY DISTRICT  
OF KNOX COUNTY

WATER TREATMENT PLANT EXPANSION TO 34 MGD

EROSION CONTROL PLAN

DESIGNED: CRB	CHECKED:	DATE: SEPTEMBER 2004	CE1.5	0
DRAWN: CRB	JOB NO. 2092.081	SCALE: 1"=20'	SHEET	REV

PROPOSED MUNICIPAL RAW WATER INTAKE  
FILE NO. 4087000  
P.N. NO. 05-03  
EXHIBIT C



THIS LINE IS ONE INCH LONG WHEN PLOTTED FULL SCALE

NO.	DATE	DESCRIPTION OF REVISION
2	01-05-05	ADDED TRENCH DETAIL
1	12-20-04	GENERAL REVISIONS
0	09-08-04	INITIAL ISSUE

	 FIRST UTILITY DISTRICT OF KNOX COUNTY		WATER TREATMENT PLANT EXPANSION TO 34 MGD			
			RAW WATER INTAKE SCREEN DETAIL			
DESIGNED: PNB DRAWN: CG		CHECKED: JOB NO. 2092.081	DATE: SEPTEMBER 2004 SCALE: AS SHOWN	CU1.8 SHEET	2 REV	

PROPOSED MUNICIPAL RAW WATER INTAKE  
 FILE NO. 4087000  
 P.N. NO. 05-03  
 EXHIBIT D

b:\projects\4087000.dwg  
01.03.05